

FIGURE 1

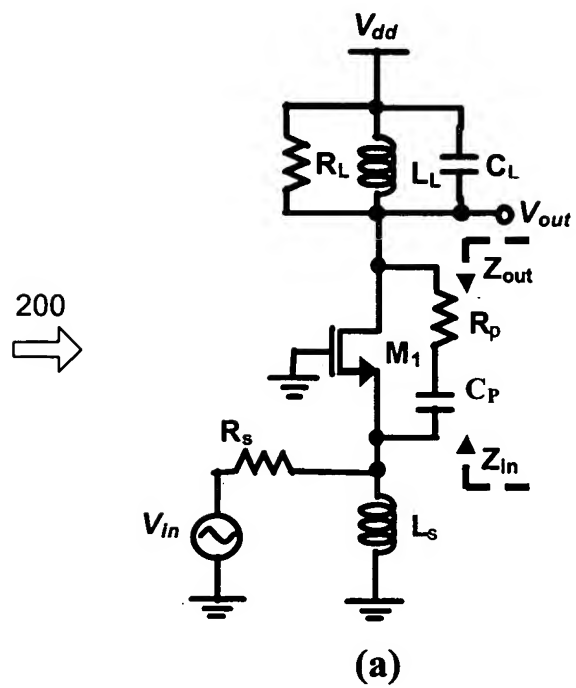


FIGURE 2

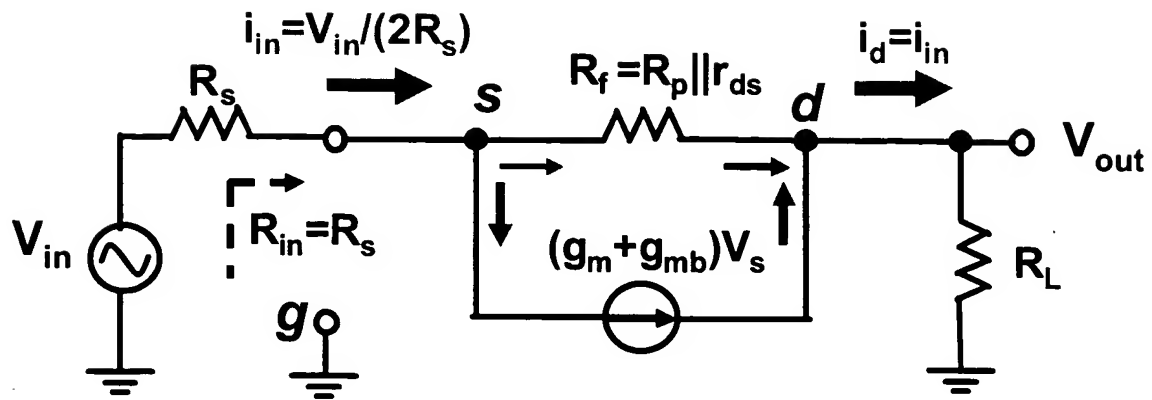
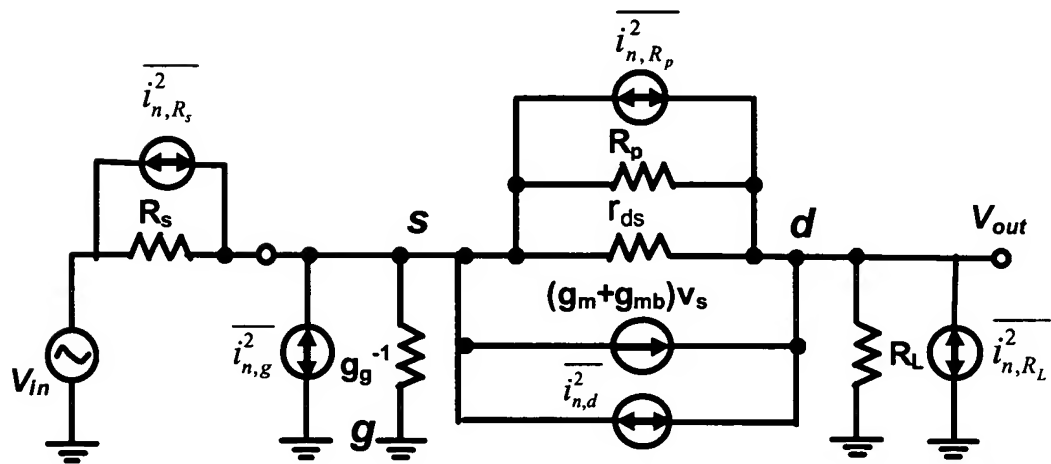


FIGURE 3



(b)

FIGURE 4

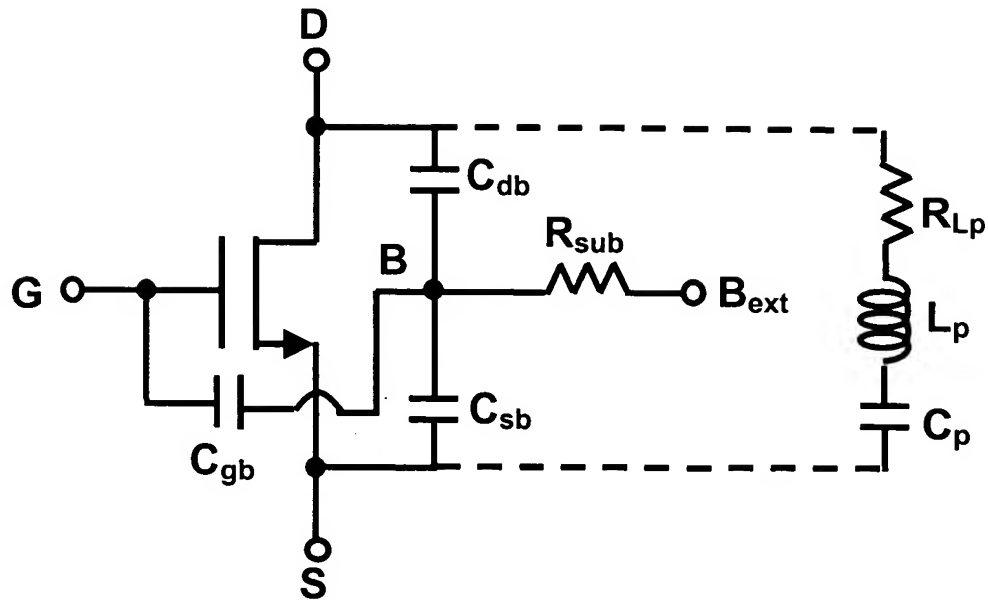


Figure 5

500 ↑

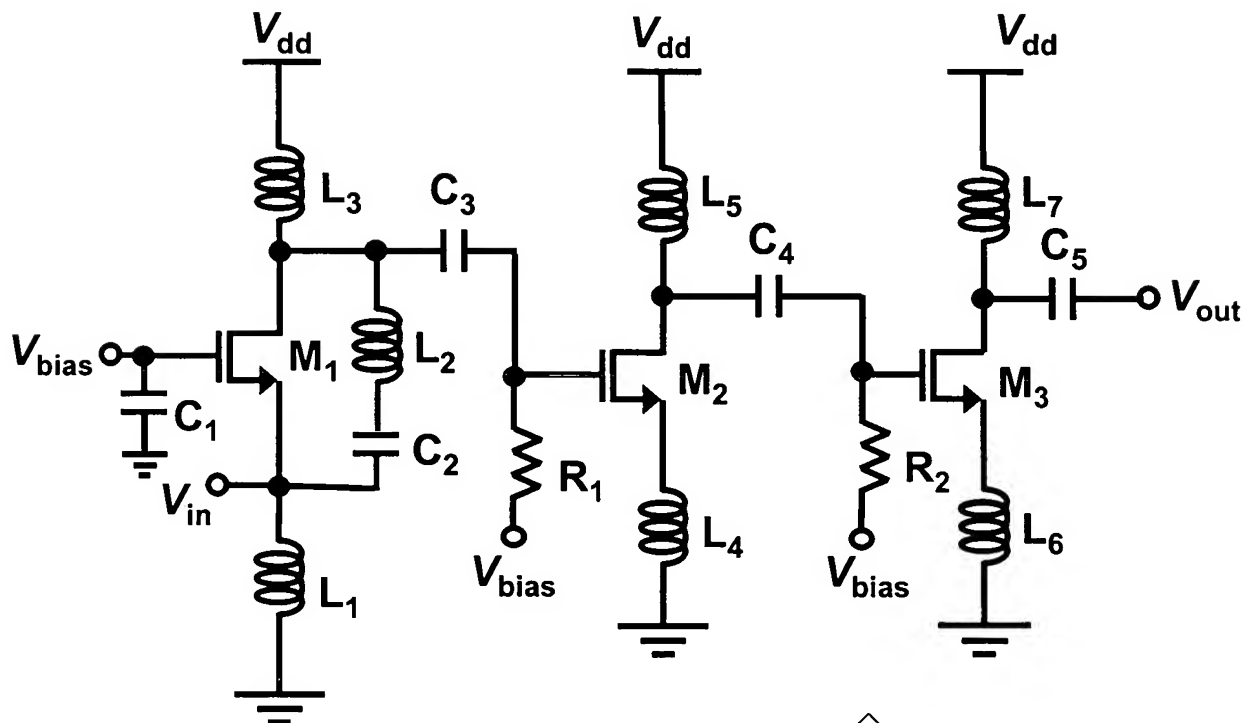


FIGURE 6

600 ↑

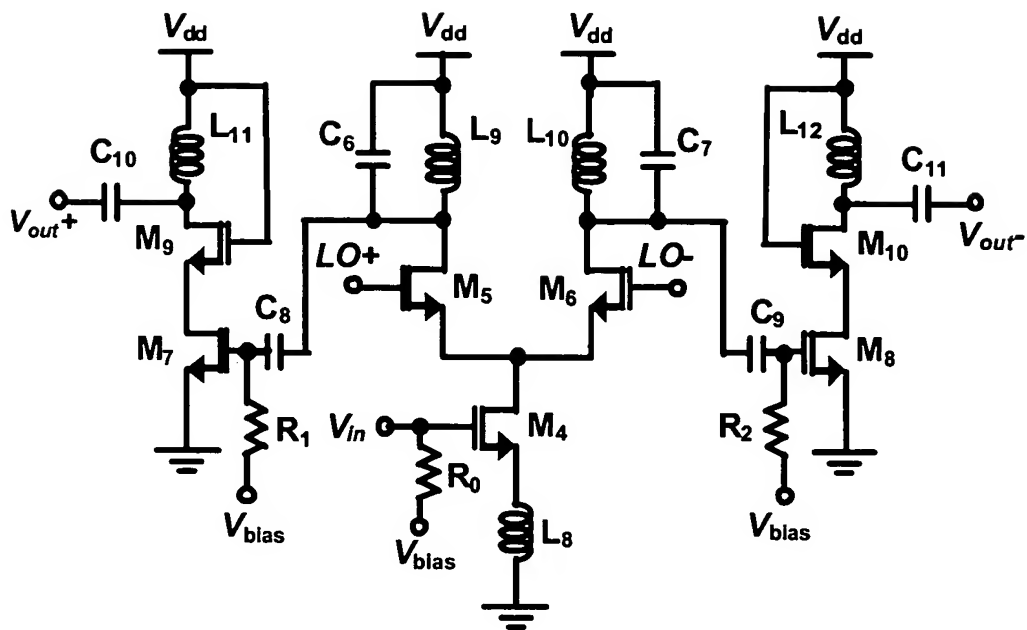


FIGURE 7

700 ↑

Parameters	Overall Front-end	LNA	Mixer
$S_{11}$	-21 dB	-21 dB	--
$S_{22}$	-10 dB	--	-10 dB
Peak Frequency	21.8 GHz RF	21.8 GHz RF	4.9 GHz IF
Power Gain	27.5 dB	15 dB	13 dB
Voltage Gain	35.7 dB	--	--
Noise Figure	7.7 dB	6 dB	17.5 dB
1-dB Compression Point	-23 dBm	--	--
Image Rejection	31 dB	--	--
Current Consumption	43 mA	16 mA	4 mA core cell + 23 mA output buffers
Supply Voltage	1.5 V	1.5 V	1.5 V
Chip Area	0.4 x 0.5mm <sup>2</sup>	0.2 x 0.25 mm <sup>2</sup>	--

FIGURE 8

↑ 800

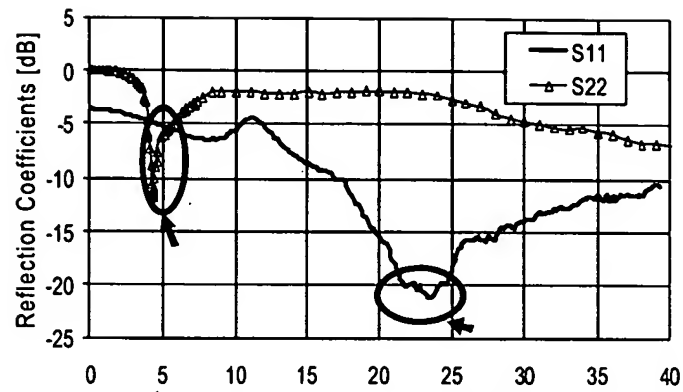


FIGURE 9

↑ 900

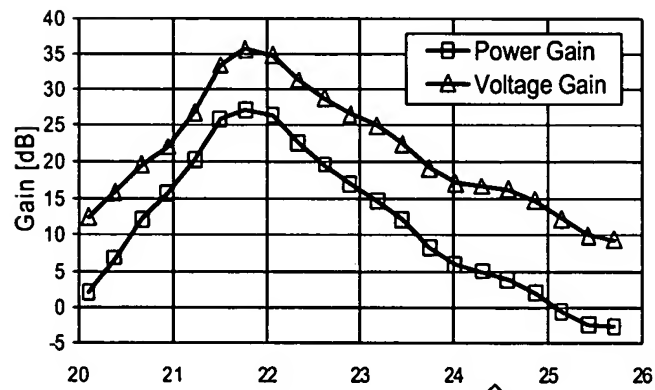


FIGURE 10

↑ 1000

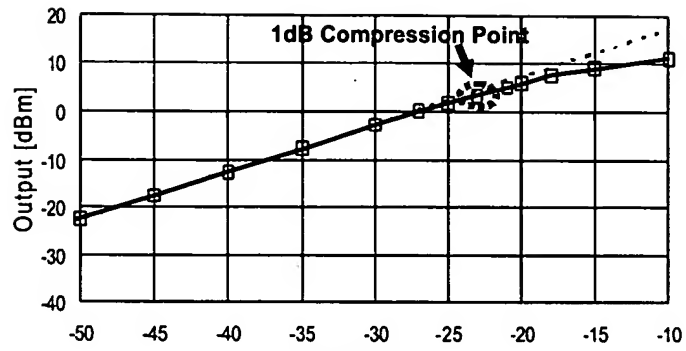


FIGURE 11



1100

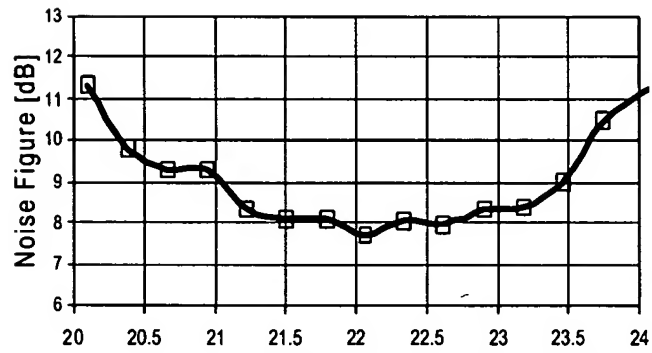


FIGURE 12



1200